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Attn: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

10 CFR 50.73

**SUSQUEHANNA STEAM ELECTRIC STATION**  
**LICENSEE EVENT REPORT 50-387/2020-001-01**  
**UNIT 1 LICENSE NO. NPF-14**  
**PLA-7898**

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**Docket No. 50-387**

Attached is Licensee Event Report (LER) 50-387/2020-001-01. The LER supplement reports an event involving an automatic scram due to a main turbine trip. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in an automatic actuation of the Reactor Protection System (including a reactor scram).

There were no actual consequences to the health and safety of the public as a result of this event.

This letter contains no new or revised regulatory commitments.

A handwritten signature in black ink, appearing to be "K. Cimorelli", written over a horizontal line.

K. Cimorelli

Attachment: LER 50-387/2020-001-01

Copy: NRC Region I  
Mr. C. Highley, NRC Sr. Resident Inspector  
Ms. S. Goetz, NRC Project Manager  
Mr. M. Shields, PA DEP/BRP

**LICENSEE EVENT REPORT (LER)**

(See Page 3 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollections.Resource@nrc.gov](mailto:Infocollections.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk all: [oir\\_submission@omb.eop.gov](mailto:oir_submission@omb.eop.gov). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

**1. Facility Name**

Susquehanna Steam Electric Station Unit 1

**2. Docket Number**

05000387

**3. Page**

1 of 3

**4. Title**

Automatic Reactor Scram Due to Main Turbine Trip Caused by an Electrical Ground Path in the B Main Transformer

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
05	03	2020	2020	- 001 -	01	01	26	2021	Facility Name	Docket Number
										05000

**9. Operating Mode**

1

**10. Power Level**

076

**11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)**

<b>10 CFR Part 20</b>	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<b>10 CFR Part 73</b>
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	<b>10 CFR Part 21</b>	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<b>10 CFR Part 50</b>	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	

☐ Other (Specify here, in Abstract, or in NRC 366A).**12. Licensee Contact for this LER****Licensee Contact**

D. R. Smith, Senior Engineer – Nuclear Regulatory Affairs

**Phone Number (Include Area Code)**

570-542-1377

**13. Complete One Line for each Component Failure Described in this Report**

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS
B	EL	XCT	ITL (See below)	Y					

**14. Supplemental Report Expected**☒ No ☐ Yes (If yes, complete 15. Expected Submission Date)**15. Expected Submission Date**

Month	Day	Year

**16. Abstract** (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On May 3, 2020 at approximately 08:21, Susquehanna Steam Electric Station Unit 1 reactor automatically scrambled due to a main turbine trip. Both divisions of the Reactor Protection System (RPS) actuated and all control rods inserted. This event was reported by Event Notification 54691 in accordance with 10 CFR 50.72(b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in an automatic actuation of the RPS (including reactor scram), as well as associated isolation and actuation of other systems listed in 10 CFR 50.73(a)(2)(iv)(B).

The direct cause of the event was an electrical path from a replacement current transformer inside the main transformer to the low voltage bus causing a ground on the 24 kV System (Main Generator). The apparent cause of the ground was a current transformer with the incorrect insulation characteristics installed as a result of the wrong current transformer being supplied to Susquehanna. Corrective actions included removing the current transformer and replacing it with a bus bar.

There were no actual consequences to the health and safety of the public as a result of this event.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Susquehanna Steam Electric Station Unit 1	05000-387	YEAR	SEQUENTIAL NUMBER	REV NO.
		2020	- 001 -	01

**NARRATIVE****CONDITIONS PRIOR TO EVENT**

Unit 1 – Mode 1, approximately 76 percent Rated Thermal Power

Unit 2 – Mode 1, approximately 100 percent Rated Thermal Power

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.

**EVENT DESCRIPTION**

On May 3, 2020 at approximately 08:21, Susquehanna Steam Electric Station Unit 1 reactor automatically scrammed due to a main turbine [EISS System/Component Code: TA/TRB] trip. The Unit 1 Control Room received indication of a main turbine trip with both divisions of the Reactor Protection System (RPS) [EISS System Code: JC] actuated and all control rods inserted. The Reactor Recirculation Pumps [EISS System/Component Code: AD/P] tripped on End of Cycle Recirculation Pump Trip (EOC-RPT). Operators subsequently maintained reactor water level at the normal operating band using the Reactor Feed Water system [EISS System Code: SJ]. All safety systems responded properly during the event.

This event was reported by Event Notification 54691 in accordance with 10 CFR 50.72(b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in an automatic actuation of the RPS (including reactor scram), as well as associated isolation and actuation of other systems listed in 10 CFR 50.73(a)(2)(iv)(B).

**CAUSE OF EVENT**

The direct cause of the event was an electrical path from a replacement current transformer (CT7) [EISS System/Component Code: EL/XCT] inside the main transformer to the low voltage bus causing a ground on the 24 kV System (Main Generator) [EISS System Code: TB]. The apparent cause of the ground was a current transformer with the incorrect insulation characteristics installed as a result of the wrong current transformer being supplied to Susquehanna.

**ANALYSIS/SAFETY SIGNIFICANCE**

The actual consequence of this event was a Unit 1 Reactor scram. The scram did not require or result in the actuation of Emergency Core Cooling System or Reactor Core Isolation Cooling system [EISS System Code: BN] and no main steam relief valves [EISS System/Component Code: SB/RV] opened. All safety systems responded properly during the event. The condition described herein did not result in a safety system functional failure. Accordingly, this event will not be counted as a safety system functional failure in the Reactor Oversight Process Performance Indicators. There were no actual consequences to the health and safety of the public as a result of this event.

**LICENSEE EVENT REPORT (LER)  
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**1. FACILITY NAME**

Susquehanna Steam Electric Station Unit 1

**2. DOCKET NUMBER**

05000-387

**3. LER NUMBER**

YEAR	SEQUENTIAL NUMBER	REV NO.
2020	- 001 -	01

**NARRATIVE****CORRECTIVE ACTIONS**

Key corrective actions included:

1. Removed the current transformer and replaced it with bus bar under an approved engineering change.

**COMPONENT FAILURE INFORMATION**

Component Identification – 1X102 CT7

Component Name – Unit 1 B Main Transformer Current Transformer 7

Component Part Number – 40889-1-001

Manufacturer – Instrument Transformers Limited (ITL)

**PREVIOUS OCCURRENCES**

None.